

Hepatitis C treatment can be shortened in 50 percent of patients, study finds

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Electron micrographs of hepatitis C virus purified from cell culture. Scale bar is 50 nanometers. Credit: Center for the Study of Hepatitis C, The Rockefeller University.

Hepatitis C drugs cure more than 90 percent of patients, but can cost more than \$50,000 per patient.

Findings from a new study could lead to significant cost savings.

Preliminary data from the study, co-led by a theoretical modeling researcher from Loyola University Chicago Stritch School of Medicine and Loyola Medicine, found that in 50 percent of patients, the standard 12-week treatment regimen could be shortened to as little as six weeks without compromising efficacy.

"There's a potential to save up to 20 percent of the costs of hepatitis C drugs," said Loyola researcher Harel Dahari, Ph.D., co-first author of the study along with Ohad Etzion, MD, of Soroka University Medical Center in Israel. Senior author is Amir Shlomai, MD, Ph.D., of Beilinson Hospital in Israel.

The study was presented November 12 during the annual meeting of the American Association for the Study of Liver Diseases in San Francisco.

Dr. Dahari is co-director of the Program for Experimental and Theoretical Modeling (PETM) in the division of hepatology of Loyola Medicine and Loyola University Chicago Stritch School of Medicine. Two other Loyola authors are Susan Uprichard, Ph.D., co-director of PETM and an associate professor in the department of microbiology and immunology and Scott Cotler, MD, head of Loyola Medicine's division of hepatology and a professor in the department of medicine of Loyola University Chicago Stritch School of Medicine.

Hepatitis C is an infection caused by a virus spread through contaminated blood. It can lead to liver damage, liver failure and liver cancer. An estimated 70 million people worldwide, including about three million in the United States, are chronically infected with hepatitis C.

A class of oral medications called direct acting anti-virals (DAA) has revolutionized the treatment of hepatitis C. In more than 90 percent of patients, the medications eliminate the virus and cure the patient, with minimal side effects. But the high cost limits access and is a substantial

financial burden on Medicare, Medicaid and private insurers.

"Treatment currently is standardized to be given for a set period of time, usually 12 weeks, rather than being tailored to the individual patient," Dr. Cotler said.

In the new study, researchers used a personalized medicine technique called modeling-based response-guided therapy to reduce treatment times when possible. After patients had undergone treatment for a few weeks, researchers measured how much hepatitis C virus levels had decreased. They used mathematical modeling to estimate how long it would take to completely eliminate the virus.

The study has included 22 patients so far. Mathematical modeling predicted that treatment could be shortened to 10 weeks in one patient (five percent of the total patients), eight weeks in eight patients (36 percent) and six weeks in two patients (nine percent). The other 11 patients (50 percent) needed to be treated for the standard 12 weeks.

Twenty-one patients remained virus-free. The only patient who relapsed had the most difficult-to-treat form of the hepatitis C virus, known as genotype 3.

The proof-of-concept pilot study showed that using response-guided therapy to reduce treatment times is feasible. To validate the results, a large multicenter trial is underway in Israel.

Dr. Dahari said that in addition to cutting costs, shorter [treatment regimens](#) would make it easier to treat [hepatitis C patients](#) who have limited health insurance benefits.

The study is titled, "Response-Guided Therapy with DAA Shortens Treatment Durations in 50 Percent of HCV-Treated Patients."

Provided by Loyola University Health System

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